



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,717	07/24/2000	Bo Jin	CY-0013	6438

7590 11/18/2003

Bradley T Sako
3954 Loch Lomand Way
Livermore, CA 94550

EXAMINER

THOMAS, TONIAE M

ART UNIT	PAPER NUMBER
----------	--------------

2822

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/621,717

Applicant(s)

JIN ET AL.

Examiner

Toniae M. Thomas

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10, 14-16, 19, 20 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 11-13, 17, 18, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the amendment filed on 02 September 2003.

Currently, claims 10-26 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. *Claims 10, 14-16, and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admitted prior art.*

The admitted prior art discloses a method of forming a monitoring structure (fig. 8 and page 5, lines 9-22). The method comprises etching a first layer 802 to form monitor trenches that extend through the first layer to an etch stop layer 804 and between silicon islands 806 on a monitor wafer 800, and forming a feature in relation to the monitor trenches, wherein the step of forming a feature includes forming a transistor. The process to be monitored is also used to form a corresponding non-monitor trench in a different layer or material than the first layer (page 1, lines 15-20).¹

3. *Claims 20 and 23-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admitted prior art.*

¹ Inherently, the SOI process being monitored by the monitor wafer 800 is used to form another SOI structure on a corresponding wafer.

The admitted prior art discloses a method of monitoring a semiconductor manufacturing process (figs. 5A-5D, 7A-7D and page 2, line 10 – page, 4, line 22). The method comprises processing a monitor wafer having monitor trenches 506 formed in the first layer 502 of the monitoring wafer 500 according to at least one process step that forms a feature, wherein the feature is a trench (5B). Inherently, the same process step is used to form the feature in a corresponding non-monitoring wafer in a different layer than the first layer in the process.

The at least one process step includes depositing and planarizing a trench insulating material 510 (figs. 5C and 5D). The at least one process step includes an STI deposition step and an STI insulator chemical mechanical polishing step.

Allowable Subject Matter

4. Claims 11-13, 17, 18, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 02 September 2003 have been fully considered but they are not persuasive.

Again, the Applicant argues that the admitted prior art does not show forming a monitor trench that monitors a process that forms a non-monitor trench in a different layer or material than the first material of the monitor trench.

Upon further consideration, the admitted prior art does show forming a monitor trench that monitors a process, the process forming a non-monitor trench in a different layer than the first material of the monitor trench. The monitor wafer is one of several wafers being processed simultaneously. The trench formed in the monitor wafer, i.e. the sacrificial wafer, is used to monitor the processing of the other wafers. Broadly interpreted, the first layer on the monitor wafer and the first layer on the other wafers are separate and distinct layers.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2822

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (703) 305-7646. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JMJ

13 November 2003


AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800